Name _____ Class _____ Date _____

Additional Practice

Lesson 7.4

1. Find the greatest common factor of each set of expressions.

a. $10x^4$ and $18x^2$

b. $10x^4$ and $40x$

c. $18p^2$ and $27q^2$

d. pq and pr

e. m^2n and mn^2

f. a^3b^3, a^2b^2, and a^2c^3

2. Write each expression as a product of two expressions. One expression should be the greatest common factor of the terms. If there is no common factor, then the answer is the original expression.

a. $10x^4 - 18x^2$

b. $10x^4 + 40x$

c. $18p^2 - 27q^2$

d. $pq + pr$

e. $m^2n - mn^2$

f. $a^3b^3 - a^2b^2 - a^2c^2$

3. Find all solutions to each equation. Use factoring and ZPP.

a. $10x^3 + 8x^2 = 0$

b. $5x = px$

c. $10x^3 = 25x^2$

d. $x^2 = 64x$

e. $10x^3 - 40x = 0$

f. $2x^2 + 2y^2 = 0$

4. Write each expression as a product.

a. $5x(4x - 1) + 6(4x - 1)$

b. $(2x - 3)(3x) + (2x - 3)(5)$

5. Write each expression as a product of expressions.

a. $4py - 7qy$

b. $4px^2 - 7qx^2$

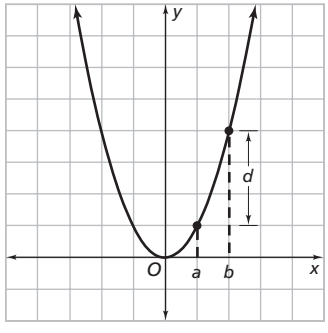
c. $4p(x - 3) + 7q(x - 3)$

d. $4px^2 - 8qx^2$

e. $4px - 12p + 7qx - 21q$

f. $p(r + s) + (r + s)$

6. This graph shows two points on the graph of $y = x^2$.



Show that the vertical distance d is $(b - a)(b + a)$.

7. Expand each expression.

a. $(x - 1)(x^5 - x^4 - x^3 - x^2 - x - 1)$

b. $(x - 1)(x^6 - x^5 - x^4 - x^3 - x^2 - x - 1)$

c. $(x - 1)(x^7 - x^6 - x^5 - x^4 - x^3 - x^2 - x - 1)$

d. Use the pattern in parts (a)–(c) to find the missing expression in the equation $(x - 1)(\square) = x^{10} - 2x^9 + 1$.